

# U.S. ENVIRONMENTAL PROTECTION AGENCY

**MEMORANDUM**

DATE: 2/24/95

TO: C. Fitzsimmons  
USEPA Region #II

FROM: Ed Moyle  
TAT Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packs noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated:

✓ Data Completeness	✓ Blanks
✓ Spectra Matching Quality	✓ DFTPP and BFB Tuning
✓ Surrogate Spikes	✓ Chromatography
✓ Matrix Spikes/Duplicates	✓ Holding Times
✓ Calibration	✓ Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions attached so that the review may be reviewed by others.

Summary of Results

	I <u>Volatiles</u>	II <u>B/N/A</u>	III <u>Pesticide</u>	IV <u>Other</u>
Acceptable as Submitted	_____	_____	_____	_____
Acceptable with Comments	✓	✓	✓	_____
Unacceptable, Action Pending	_____	_____	_____	_____
Unacceptable	_____	_____	_____	_____

Data Reviewed by: Ed Moyle Date: 2/24/95

Review Authorized By: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: Ed Moyle

Area Code/Phone No.: 908-225-6016

372205



## NARRATIVE

CASE No. 412

SITE NAME:

Bayonne Canal

Laboratory Name:

Accredited Lab

### INTRODUCTION:

The laboratory's portion of this Case consisted of Soil, Solid/Sludge & Liquid samples collected on 11/29, 19 95.

The laboratory reported No problem(s) with the receipt of the samples.

The laboratory reported No problems with the analyses of TCL compounds.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed and require no comment. Details relevant to these comments are given on the forms in Appendix A. Amounts of detected compounds are summarized in Appendix B.

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

AFP/Case No. # 0412 SDG No. - LABORATORY Accredited Labs SITE Bayonne Canal

DATA ASSESSMENT:

The current Functional Guidelines for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detects), "R" (unusable), or "JN" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Reviewer's  
Signature: *[Signature]* Date: 2/22/1995

Verified By: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/199\_\_

## DATA ASSESSMENT

### 1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following analytes in the samples shown were qualified because of holding time:

*None*

DATA ASSESSMENT

2. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for the common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the samples shown were qualified with "U" for these reasons:

A) Method blank contamination

*none*

B) Field or rinse blank contamination ("water blanks" or "distilled water blanks" are validated like any other sample)

VOA *methylen chloride* --- "U" qualified positive Analytes in --- BB-SS-01,03,  
04,05,06,07,08, BBDS02,  
04,05, BBDL-01,02,03,04,  
05,06,07,08

C) Trip blank contamination :

*none*

## DATA ASSESSMENT

### 3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, or missing, all associated data will be classified as unusable, "R". The following samples shown were qualified with "R" because of tuning:

*None*

## DATA ASSESSMENT

### 4. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

#### A) RESPONSE FACTOR

The response factor measures the instrument's response to specific chemical compounds. The response factor for the VOA/BNA Target Compound List (TCL) must be  $\geq 0.05$  in both the initial and continuing calibrations. A value  $< 0.05$  indicates a serious detection and quantitation problem (poor sensitivity). If the mean RRF of the initial calibration or the continuing calibration has a response factor  $< 0.05$  for any analyte, those analytes detected in environmental samples will be qualified as estimated, "J". All non-detects for those compounds will be rejected ("R"). The following analytes in the samples shown were qualified because of response factor:

*BNA*  
*Response Factor (RF) less than .050*  
*Benzoic Acid - - - Rejected Nondetects - - - BB-DS-0305,06,07*  
*BB-DL-01,02,03,04,05*  
*06,07,08*

## DATA ASSESSMENT

### 5. CALIBRATION:

#### A) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J"; and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R".

For the PCB/PESTICIDE fraction, if %RSD exceeds 20% for all analytes except for the 2 surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the samples shown were qualified for %RSD and %D:

#### *Initial Calibration (RSD exceedances)*

##### *BNA*

##### *30-50% RSD*

*Butylbenzylphthalate* --- J qualified positive Analytes --- BB-SS-01, 02, 03, 04, 05, 06, 07, 08, BB-DS-07

##### *50-90% RSD*

*Benzoic Acid* --- J qualified Data --- BB-FB-01, BB-SS-01, 02, 03, 04, 05, 06, 07, 08, BB-DS-01, 02, 04

*Hexachlorocyclopentadiene* --- J qualified Data --- BB-DS-03, 04

*Indeno (1,2,3-cd)pyrene* --- J qualified Data --- BB-SS-02, 03, 04, 05, 06, 07, 08, BB-DS-01, 02

*Dibenzo (ghi) Anthracene* --- J qualified Data --- BB-SS-02, 03, 04, 05, 06, 07, 08, BB-DS-01, 02

*Benzo (ghi)perylene* --- J qualified Data --- BB-SS-02, 03, 04, 05, 06, 07, 08, BB-DS-01, 02

*Calibration Exceedances continued on next page*



# Continuing Calibration (Calibration Cont'd)

7 of 13

## VOA

25-50% D

2 Butanone - - - - J qualified Positive Analyte - - - BB-DS-01,02,05, BBAL05

50-90% D

Methylene Chloride - - - J qualified Data - - - BB-FB-01

Acetone - - - - - J qualified Data - - - BB-DS-01,02,07, BBDL01,  
04,05, BB-RB-01

## BNA

50-90% D

Bis(2 chloroisopropyl) ether - - J qualified Data - - BBFB-01, BBDS03,07,  
BB-DL-01,02,03,04,05,06,  
07,08, BB-RB-01

n-Nitroso Di-n-propylamine - - - J qualified Data - - BB-DS-03,07, BBDL01,02,  
03,04,05,06,07,08

Hexachlorocyclopentadiene - - - J qualified Data - - BBFB01, BB-RB-01

Hexachloroethane - - - - - J qualified Data - - BB-DS04

Pyrene - - - - - J qualified Data - - BBFB-01, BB-DS-03,07,  
BB-DL-01,02,03,04,05,06,  
07,08, BB-RB-01

Indeno (1,2,3-cd) pyrene - - J qualified Data - - BB-FB-01, BB-SS-01,  
BB-RB-01

Dibenzo(a,h)anthracene - - J qualified Data - - BBFB-01, BB-SS-01, BB-RB01

Benzo(g,h,i)perylene - - - J qualified Data - - BBFB01, BBSS01,07, BBDL01,  
02,03,04,05,06,07,08, BB-RB01

DATA ASSESSMENT

6. SURROGATES/ SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/ SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/ SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below. The following analytes for the samples shown were qualified because of surrogate/ SMC recovery:

VOA

Surrogate values for percent recovery above acceptable range  
Methylene Chloride as a positive analyte was qualified in  
samples BB-SS-01,03,05

Surrogate values for percent recovery less than acceptable ranges  
All sample data was qualified in BB-SS02,05,06,07,08

## DATA ASSESSMENT

### 7. INTERNAL STANDARDS PERFORMANCE:

Internal Standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than  $\pm 30$  seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ" only if IS area is < 50%. Non detects are qualified as "R" if there is a severe loss of sensitivity ( < 25% of associated IS area counts).

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction. The following analytes in the samples shown were qualified because of internal standards performance:

*None*

## DATA ASSESSMENT

### 8. COMPOUND IDENTIFICATION:

#### A) VOLATILE AND SEMI-VOLATILE FRACTIONS

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within  $\pm 0.06$  RRT units of the standard compound, and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For tentatively identified compounds (TIC), the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. The following analytes in the samples shown were qualified for compound identification:

*None*

#### B) PESTICIDE FRACTION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns. The percent difference (%D) of the positive results obtained on the two GC columns should be  $\leq 25\%$ . The following analytes in the samples shown were qualified because of compound identification:

### DATA ASSESSMENT

#### 9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of data. The following analytes, for the samples shown, were qualified because of MS/MSD:

VOA - . . .

None

BNA

Matrix influences were noted to influence the % recovery of the following compounds.

2 nitrophenol - . . . Rejected nondetect analyte - - - BBSS01, ABDL03

2,4 Dinitrophenol - . . . Rejected nondetect analytes - - - BBSS01

pentachlorophenol - - - Rejected nondetect analytes - - - ABDL03

DATA ASSESSMENT

10. OTHER QC DATA OUT OF SPECIFICATION:

*Physical characterization*  
Samples BBDS 05 and 06 were qualified with J  
qualified due to high moisture (over 50%) in a soil requiring  
"J" qualification in BB-DS 05, 06 due to natural dilution of samples.  
in VOA BNA and PEST PCB sections.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT (continued on next page if necessary):

*Samples identified as Series BB-DL-01, 02, 03, 04, 05, 06 were identified on COC as a hi. conc. liquid and the laboratory evaluated these liquids as liquids in aqueous units ug/L rather than ug/L used for a petroleum product - Solvent as defined by lab. The residual samples were tested by laboratory and were determined to be a non-aqueous petroleum liquid requiring ug/kg rather than ug/L and the form one results page was corrected to reflect*

12. CONTRACTUAL NON-COMPLIANCE: *This, except for Pest/PCB section having proper units.*

13. This package contains re-extraction, re-analysis or dilution. Upon reviewing the QA results, the following form I(s) are identified to be used:

*VOA - Analytes exceeding calibration*

*2 Hexanone - - - - - J qualified Analyte. - - - BB DL05*

*MP Xylene - - - - - J qualified Analyte. - - - BB DL05*

*BNA - Analytes exceeding calibration*

*Iso phorone - - - - - J qualified Analyte. - - - BB DS03, 06*

*Napthalene - - - - - J qualified Analyte. - - - BB DS03, 06*

*2 methyl napthalene - - - J qualified Analyte. - - - BB DS03, 06*

*Bis 2 ethyl hexyl phthalate - - J qualified Analyte. - - - BB DS03, 06*

DATA ASSESSMENT

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT (continued):

*None*

## OTHER ANALYTES WORK TABLE

PROJECT RFP/Case # 0412 Bayonne Canal

PAGE \_\_\_\_ OF \_\_\_\_

SAMPLING DATE 11/29/94

TAT PM M. Denno

CONCENTRATION Low - Med.

VOA

Soils in  $\mu\text{g/kg}$

SAMPLE #/CONCENTRATION ( )

[illegible]







## OTHER ANALYTES WORK TABLE

PROJECT RFP/case # 412

PAGE \_\_\_\_ OF \_\_\_\_

SAMPLING DATE 11/29/94

TATEM M. Denno

CONCENTRATION *Low 8 med.*

BNA

Soils in g/g/kg.

SAMPLE #/CONCENTRATION ( )

[illegible]

## OTHER ANALYTES WORK TABLE

PROJECT RFP/case # 4/2

PAGE \_ OF \_

SAMPLING DATE 11/29/94

TAT FM M. Denno

CONCENTRATION Low. & Med.

BNA

Soils in g/g/kg.

SAMPLE #/CONCENTRATION ( )

[illegible]

### OTHER ANALYTES WORK TABLE

PROJECT RFP/Case # 04/2 Bayonne Canal

PAGE \_\_\_\_ OF \_\_\_\_

SAMPLING DATE 11/29/94

TAT PM M. Senno

CONCENTRATION Low - Med

BNA

Solid/Sediment in g/kg

SAMPLE #/CONCENTRATION ( )

[illegible]

[illegible]



## OTHER ANALYTICAL WORK TABLE

PROJECT RFP/case # 0412

PAGE OF

SAMPLING DATE 11/29/94

TAT FM M. Denno

CONCENTRATION Low - med.

SAMPLE #/CONCENTRATION ( )

PEST/PCB      Soils in  $\mu\text{g/kg}$

[illegible]



## OTHER ANALYTES WORK TABLE

PROJECT RFP/case #0412

PAGE OF

SAMPLING DATE 11/29/94

TAT FM M. Denno

CONCENTRATION Low - Med

PEST/PCB

Solid Sledge in 4/6 kg

SAMPLE #/CONCENTRATION ( )  
Petroleum  
Solvent

[illegible]



1090 King Georges Post Road, Suite 201  
Edison, NJ 08837

Phone: 908-225-6116  
Fax: 908-225-7037

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION  
EPA CONTRACT 68-WO-0036

TO: OSC C Fitesimaon-S ✓  
FROM: TAT Ed Mayle / M. Denno  
SUBJECT: Documentation of Transmittal  
SITE: Bayonne Barrel  
TDD#: 02-9410-090 )  
DATE: 2/24/95

The purpose of this memo is to document the transmittal of the following:

- \_\_\_ Letter Report DCN# \_\_\_\_\_
- \_\_\_ OSC Report Draft/Final DCN# \_\_\_\_\_
- \_\_\_ Photographs
- ✓ \_\_\_ Analytical Data
- \_\_\_ POLREP
- \_\_\_ Safety Plan DCN# \_\_\_\_\_
- \_\_\_ Community Relations Plan DCN# \_\_\_\_\_
- \_\_\_ Sampling Plan DCN# \_\_\_\_\_
- \_\_\_ Sampling Report DCN# \_\_\_\_\_
- \_\_\_ Action Memorandum DCN# \_\_\_\_\_
- \_\_\_ SPCC Report
- \_\_\_ Site Maps
- \_\_\_ Other \_\_\_\_\_

cc: TAT PM M. Denno )  
TDD File 02-9411-L5 )  
(0412)

Roy F. Weston, Inc.

MAJOR PROGRAMS DIVISION

In Association with Foster Wheeler Enviroresponse, Inc., Resource Applications, Inc., C.C. Johnson & Malhotra, P.C.,  
R.E. Sarriera Associates, and GRB Environmental Services, Inc.



1090 King Georges Post Road  
Suite 201, Edison, NJ 08837 1-201-225-6116

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION  
EPA CONTRACT 68-WO-0036

TRANSMITTAL MEMO

TO: *C. Fitzsimmons*  
Response and Prevention Branch, U.S. EPA

FROM: *Ed Moyle*  
TAT Region II

SUBJECT: Documentation of Transmittal

DATE: *2/24/95*

The purpose of this memo is to transmit the following information:

SITE: *Bayonne Canal.*

SUBJECT: *RFP/Case #412 validated Data*

CC: TAT PM  
TAT FILE

*Demo*  
*02 9411 - L5*  
*(0412)*

Roy F. Weston, Inc.

MAJOR PROGRAMS DIVISION

In Association with Foster Wheeler Enviresponse, Inc., Resource Applications, Inc., C.C. Johnson Malhotra, P.C.,  
and R.E. Sarriera Associates